

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A process of detecting an elongated oligonucleotide elongation, the process comprising:
 - (a) providing an oligonucleotide;
 - (b) combining a detectable moiety and the oligonucleotide to form a labeled oligonucleotide, the labeled oligonucleotide characterized by an organometallic coordinate covalent bond between the detectable moiety and the oligonucleotide;
 - (c) adding the labeled oligonucleotide to an oligonucleotide elongation mixture;
 - (d) initiating an elongation reaction in the oligonucleotide elongation mixture; and
 - (e) assaying for the labeled oligonucleotide as part of the elongated oligonucleotide in the oligonucleotide elongation mixture to detect the elongated oligonucleotide elongation.
2. (Canceled)
3. (Original) The process of claim 1 wherein the detectable moiety comprises a fluorophore.
4. (Original) The process of claim 1 wherein the detectable moiety comprises a metal-containing fluorescent compound.
5. (Original) The process of claim 4 wherein the metal-containing fluorescent compound comprises platinum.

6. (Original) The process of claim 4 wherein the metal-containing fluorescent compound comprises a metal selected from the group consisting of: palladium, rhodium, ruthenium, osmium, and iridium.

7. (Currently amended) The process of claim 1 wherein the ~~elongation-reaction~~ elongated oligonucleotide is formed by a polymerase chain reaction.

8. (Canceled)

9. (Currently amended) The process of claim 1 wherein the ~~elongation reaction~~ elongated oligonucleotide is formed by a primer extension reaction.

10. (Currently amended) The process of claim 1 wherein the ~~elongation-reaction~~ elongated oligonucleotide is formed by a ligase chain reaction.

11. (Currently amended) The process of claim 1 wherein the process further comprises purifying the elongated oligonucleotide containing the labeled oligonucleotide.

12. (Previously presented) The process of claim 1 wherein the step of assaying the labeled oligonucleotide comprises a measurement selected from the group consisting of: fluorescence polarization, fluorescence intensity, and fluorescence resonance energy transfer.

13-14 (Canceled)

15. (Currently amended) A process of detecting an elongated oligonucleotide elongation, the process comprising the steps of:

- (a) providing an oligonucleotide elongation reaction mixture comprising an oligonucleotide labeled with a fluorescent compound through an organometallic coordinate covalent bond;
- (b) measuring a fluorescence parameter in the oligonucleotide elongation reaction mixture at a first time point to obtain a test measurement of the elongated oligonucleotide containing the oligonucleotide labeled with the fluorescent compound; and
- (c) comparing the test measurement with a reference measurement differing in the elongated oligonucleotide present relative to the test measurement to detect the elongated oligonucleotide elongation.

16. (Currently amended) The process of claim 15 wherein the reference measurement is a second measurement of a fluorescence parameter in the oligonucleotide reaction mixture at a second time point.

17. (Currently amended) The process of claim 16 wherein the second time point is before initiation formation of the elongation reaction elongated oligonucleotide.

18. (Currently amended) The process of claim 16 wherein the first and second time points are after initiation formation of the elongation reaction elongated oligonucleotide.

19. (Currently amended) The process of claim 15 wherein the reference measurement is a measurement of a fluorescence parameter in a second oligonucleotide extension reaction mixture having a composition of the oligonucleotide extension reaction mixture.

20-21 (Canceled)

22. (Currently amended) The process of claim 21 15 wherein the metal containing fluorescent compound comprises platinum.

23. (Currently amended) The process of claim 21 15 wherein the metal containing fluorescent compound comprises a metal selected from the group consisting of: palladium, rhodium, ruthenium, osmium, and iridium.

24. (Currently amended) The process of claim 15 wherein the elongation reaction elongated oligonucleotide is formed by a polymerase chain reaction.

25. (Currently amended) The process of claim 15 wherein the elongation reaction elongated oligonucleotide is formed by a reverse transcription reaction.

26. (Currently amended) The process of claim 15 wherein the elongation reaction elongated oligonucleotide is formed by a primer extension reaction.

27. (Currently amended) The process of claim 15 wherein the ~~elongation reaction~~ ~~elongated oligonucleotide is formed by a ligase chain reaction.~~

28. (Currently amended) The process of claim 15 wherein the fluorescence parameter is selected from the group consisting of: fluorescence polarization, ~~and~~ fluorescence intensity, and fluorescence resonance energy transfer.

29-38 (Canceled)

39. (Currently amended) A process of detecting formation of an oligonucleotide hybrid of a DNA:DNA, DNA:RNA, or RNA:RNA complex, the process comprising:

- (a) providing a hybridization reaction mixture comprising an oligonucleotide labeled with a metal-containing fluorescent compound through a dual contribution covalent bond;
- (b) measuring a fluorescence parameter under hybridization conditions associated with the metal-containing fluorescent compound in the hybridization reaction mixture at a first time point to obtain a test measurement; and
- (c) comparing the test measurement with a reference measurement differing in the oligonucleotide hybrid present relative to the test measurement to detect the oligonucleotide hybridization hybrid of a DNA:DNA, DNA:RNA, or RNA:RNA complex.

40-54 (Canceled)